

CLAIMS

1. A method for scanning a message-list accessible to a plurality of processors, said method comprising:
 - identifying, in said message-list, a message-slot containing a message intended for a recipient processor from said plurality of processors;
 - obtaining, from said identified message-slot, information indicative of a location of a succeeding message-slot in said message-list; and
 - caching, for retrieval during a subsequent scan of said message-list, said information indicative of said location of said succeeding message-slot.
2. The method of claim 1, wherein obtaining information indicative of said location of said succeeding message-slot comprises obtaining a next-message pointer from said identified message-slot.
3. The method of claim 1, wherein caching said information indicative of said location of said succeeding message-slot comprises storing said information in a memory local to said recipient processor.
4. The method of claim 1, wherein caching said information indicative of said location of said succeeding message-slot comprises:
 - determining if a reset condition exists; and
 - caching said information if no reset condition exists.
5. The method of claim 4, wherein determining whether a reset condition exists comprises determining whether said information indicative of said location of said succeeding message-slot identifies an invalid location.

6. The method of claim 4, wherein determining whether a reset condition exists comprises determining whether a number of scans since a previous occurrence of a reset condition exceeds a threshold.
7. A method for scanning a message-list accessible to a plurality of processors, said method comprising:
- retrieving, from a cache associated with a scanning processor from said plurality of processors, information identifying a starting message-slot; and
 - beginning a scan of said message-list at said starting message-slot.
8. The method of claim 7, wherein retrieving information identifying a starting message-slot comprises retrieving a pointer to a message subsequent to a previous message intended for said scanning processor.
9. The method of claim 7, wherein beginning a scan of said message-list comprises:
- determining whether a reset condition exists; and
 - beginning said scan at said starting message-slot if no reset condition exists.
10. The method of claim 9, wherein determining whether a reset condition exists comprises determining whether said information indicative of said location of said starting message-slot identifies an invalid location.
11. The method of claim 9, wherein determining whether a reset condition exists comprises determining whether a number of scans since a previous occurrence of a reset condition exceeds a threshold.
12. A data-storage system comprising:
- a plurality of processors, each processor having a local memory;

a shared memory accessible to each processor in said plurality of processors;

a message section in said shared memory, said message section including a message-list having an ordered sequence of message-slots, each of said message-slots including information identifying a succeeding slot in said message-list.

13. The data-storage system of claim 12, wherein said local memory comprises a cache for storage of said information identifying a succeeding slot.
14. The data-storage system of claim 13, wherein said cache comprises a look-ahead pointer identifying said succeeding message-slot.
15. The data-storage system of claim 14, wherein said local memory comprises a counter indicating an interval since a scanning processor encountered a message-slot containing a message for which said scanning processor was an intended recipient.
16. The data-storage system of claim 15, wherein said counter indicates a number of scans since a scanning processor encountered a message-slot containing a message for which said scanning processor was an intended recipient.
17. The data-storage system of claim 12, wherein said local memory further comprises a reset-detecting process configured to detect a reset condition.
18. The data-storage system of claim 17, wherein said reset-detecting process is configured to compare a reset threshold with an interval since a scanning processor encountered a message-slot containing a message for which said scanning processor was an intended recipient.
19. The data-storage system of claim 18, wherein said reset-detecting process is configured to declare a reset condition when said interval exceeds said reset threshold.

20. The data-storage system of claim 18, wherein said reset-detecting process is configured to detect whether said information identifying a succeeding slot in said message-slot is invalid.
21. The data-storage system of claim 20, wherein said reset-detecting process is configured to declare a reset condition when said information identifying a succeeding slot in said message-list is invalid.
22. A computer-readable medium having encoded thereon software for scanning a message-list accessible to a plurality of processors, said software comprising instructions for:

identifying, in said message-list, a message-slot containing a message intended for a recipient processor from said plurality of processors;

obtaining, from said identified message-slot, information indicative of a location of a succeeding message-slot in said message-list; and

caching, for retrieval during a subsequent scan of said message-list, said information indicative of said location of said succeeding message-slot.

23. The computer-readable medium of claim 22, wherein said instructions for obtaining information indicative of said location of said succeeding message-slot comprise instructions for obtaining a next-message pointer from said identified message-slot.
24. The computer-readable medium of claim 22, wherein said instructions for caching said information indicative of said location of said succeeding message-slot comprise instructions for storing said information in a memory local to said recipient processor.
25. The computer-readable medium of claim 22, wherein instructions for caching said information indicative of said location of said succeeding message-slot comprise instructions for:

determining if a reset condition exists; and

caching said information if no reset condition exists.

26. The computer-readable medium of claim 25, wherein said instructions for determining whether a reset condition exists comprise instructions for determining whether said information indicative of said location of said succeeding message-slot identifies an invalid location.
27. The computer-readable medium of claim 25, wherein said instructions for determining whether a reset condition exists comprise instructions for determining whether a number of scans since a previous occurrence of a reset condition exceeds a threshold.
28. A computer-readable medium having encoded thereon software for scanning a message-list accessible to a plurality of processors, said software comprising instructions for:
- retrieving, from a cache associated with a scanning processor from said plurality of processors, information identifying a starting message-slot;
 - and
 - beginning a scan of said message-list at said starting message-slot.
29. The computer-readable medium of claim 28, wherein said instructions for retrieving information identifying a starting message-slot comprise instructions for retrieving a pointer to a message subsequent to a previous message intended for said scanning processor.
30. The computer-readable medium of claim 28, wherein said instructions for beginning a scan of said message-list comprise instructions for:
- determining whether a reset condition exists; and

beginning said scan at said starting message-slot if no reset condition exists.

31. The computer-readable medium of claim 30, wherein said instructions for determining whether a reset condition exists comprise instructions for determining whether said information indicative of said location of said starting message-slot identifies an invalid location.
32. The computer-readable medium of claim 30, wherein said instructions for determining whether a reset condition exists comprise instructions for determining whether a number of scans since a previous occurrence of a reset condition exceeds a threshold.

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